

March 15, 2016

TO: Members of the MAG Transportation Safety Committee

FROM: Dana Alvidrez, City of Chandler, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Tuesday, March 22, 2016 - 10:00 a.m.
MAG Office Building, 2nd Floor, Ironwood Room
302 North First Avenue, Phoenix

A meeting of the MAG Transportation Safety Committee will be held at the time and place noted above. Committee members or their proxies may attend **in person, via videoconference or by telephone conference call**. Those attending by video conference must notify the MAG site three business days prior to the meeting. Those attending by telephone conference call please contact MAG offices for conference call instructions.

Please park in the garage under the MAG building, bring your ticket, parking will be validated. For those using transit, Valley Metro/RPTA will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

In 1996, the Regional Council approved a simple majority quorum for all MAG advisory committees. If the Transportation Safety Committee does not meet the quorum requirement, members who have arrived at the meeting will be instructed a legal meeting cannot occur and subsequently be dismissed. Your attendance at the meeting is strongly encouraged.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting MAG. Requests should be made as early as possible to allow time to arrange the accommodation.

If you have any questions regarding the meeting, please contact Sarath Joshua at (602) 254-6300.

TENTATIVE AGENDA

COMMITTEE ACTION REQUESTED

1. Call To Order

For the March 22, 2016 meeting, the quorum requirement is 10 committee members.

2. Approval of January 26, 2016 Meeting Minutes

3. Call to Audience

An opportunity will be provided to members of the public to address the Transportation Safety Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Members of the public will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless members request an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity at the time the item is heard.

4. Program Managers Report

The following items will be addressed:

- Avondale STSP Update
- 2016 Crossing Guard Training Workshops
- RTSIMS online access update
- FY2017 & 2018 MAG HSIP call for projects schedule (Attachment One)
- Termination of Interim Approval: Use of Clearview Font for Positive Contrast

5. MAG Safety On-Call Consultant Selection

A total of 23 Statements of Qualifications (SOQ) were received in response to the MAG Request for Qualifications for developing a list of on-call consultants for both ITS and Safety

2. Review and approve the January 26, 2016, meeting minutes.

3. For information.

4. For information and discussion.

5. For information and discussion and possible action to recommend the list of consultants shown on Attachment Two.

Planning. Of these, twenty (20) firms have sought to qualify in Transportation Safety. A selection panel consisting of members of the committee and MAG staff reviewed the SOQs and met on March 14, 2016, and has generated a recommended list of consultants qualified to provide services in Transportation Safety Planning. Attachment Two shows the ranked list of recommended consultants.

6. 2016 RSA & PA Program Enhancements

This agenda item will be a continuation of the discussion, at the last committee meeting held on January 26th, regarding enhancements to the RSA and PA program.

At the January meeting, a handout was provided that listed the MAG top 100 list of high crash risk intersections, for 2010 to 2014, along with details on predominant crash types and crash severity. This information was generated using RTSIMS, based on suggestions made during the RSA process by local agency staff, RSA team members and the RSA consultants.

The purpose of this handout was to provide committee members additional information that might be useful in refining the process for selecting future RSA and PA sites, so that safety improvements at these sites would better meet ADOT HSIP requirements and have a higher probability of receiving HSIP funds. The handout has been updated with some additional information on bicyclist and pedestrian crashes (See Attachment Three).

Since the January meeting, MAG staff has gathered additional data on past RSA and PA project locations. This information will be provided at the meeting.

The possible changes to the RSA and PA program will be discussed, and will include:

- RSA and PA projects selected by the committee using a data driven process, in coordination with the effected local agency,

6. For information and discussion.

in lieu of an open call for projects.

- Convening an RSA and PA summit for consultants and local agencies to discuss possible enhancement to how RSAs and PAs are carried out.
- Potential changes to the RSA Final Report template, including the addition of useful information on performance measurement.

7. Reports by Committee Members on Transportation Safety Activities

Members will be requested to report agency activities or current issues that are related to transportation safety.

8. Requests for Future Agenda Items

Members will be provided the opportunity to suggest future agenda topics.

9. Next Meeting

The next meeting is scheduled is a **special meeting** to be held on **Wednesday**, April 27, 2016 at 9:00 a.m. in the MAG **Chaparral Room**.

10. Adjournment

7. For information and discussion.

8. For information and discussion.

9. For information and discussion.

DRAFT MINUTES OF
MARICOPA ASSOCIATION OF GOVERNMENTS
TRANSPORTATION SAFETY COMMITTEE MEETING

January 26, 2016
Maricopa Association of Governments
Ironwood Room, Suite 200
302 N. 1st Ave,
Phoenix, AZ 85003

MEMBERS ATTENDING

- | | |
|---|---|
| * Cristy Robinson, AAA Arizona | # Hugh Bigalk, City of Goodyear |
| Tom Burch, AARP | Mike Gillespie, Litchfield Park |
| Larry Talley for Richard Weeks, ADOT | Mazen Muradvich for Nicolaas Swart, |
| Shane Kiesow, City of Apache Junction | Maricopa County |
| * Robert Gray, ASU | # Renate Ehm, City of Mesa |
| # Paul Lopez, City of Avondale | * Jeremy Knapp, Town of Paradise Valley |
| * Jason Mahkovtz, City of Buckeye | # Chris Lemka for Jamal Rahimi, |
| Dana Alvidrez (Chair), City of Chandler | City of Peoria |
| * Nick Russo, City of El Mirage | * Kerry Wilcoxon, City of Phoenix |
| Kelly LaRosa, FHWA | * George Williams, City of Scottsdale |
| Leslie Bubke, Town of Gilbert | Dana Owsiany, City of Surprise |
| Kiran Guntupalli, City of Glendale | # Julian Dresang, City of Tempe |
| * Alberto Gutier, GOHS | Sam Diggins for Adrian Ruiz, RPTA |

OTHERS PRESENT

- | | |
|------------------------|--------------------------------|
| Sarath Joshua, MAG | Andrew Kwasniak, Tatum Group |
| Margaret Boone, MAG | Mona Aglan, ADOT TSS |
| Eric Nava, MAG | Mike Blankenship, AMEC |
| Micah Henry, MAG | Natalie Carrick, Michael Baker |
| Doug McCants, Harrocks | Alan Ferrera, Wilson & Co. |

- * Not present or represented by proxy
- # Participated by teleconference
- + Participated by videoconference

1. Call to Order

Chair Dana Alvidrez called the meeting to order at 10:00 a.m.

2. Approval of November 17, 2015 Meeting Minutes

Chair Dana Alvidrez called for a motion to approve the November 17, 2015 meeting minutes. Renate Ehm noted that the minutes reflect her term as Chair ended in December of 2016 in error. Julian Dresang noted an error in the minutes that the City of Tempe is to install bike detection at twenty locations and would like that to be removed from the minutes. Shane Kiesow made a motion to approve with the revisions amended by Renate and Julian, Dana Owsiany seconded and the motion passed unanimously.

3. Call to Audience

Chair Dana Alvidrez made a call to the audience providing an opportunity to members of the public to address the Transportation Safety Committee. None requested.

4. Program Manager's Report

Chair Dana Alvidrez requested Sarath Joshua to report on the items included in the Program Manager's Report.

- 2015 Road Safety Assessment Program Status: Sarath Joshua reported that the field review work and final reports associated with seven road safety assessment projects has been completed and that the two project assessments are also completed.
- City of Avondale's Strategic Transportation Safety Plan: This project was requested by the City of Avondale and is being administered by MAG through the on-call contracts at the request of ADOT. Mr. Joshua asked Margaret Boone to provide the Committee a status on this project. Margaret Boone reviewed the project schedule and completed tasks to date, including identification of action areas, potential strategies and performance measures using a data driven process and the current task of developing a methodology for prioritization of Avondale road safety improvement projects. Ms. Boone noted that the Plan is anticipated to be approved by the Avondale City Council in the summer of 2016 and invited Paul Lopez, the Avondale project manager, to comment on the process thus far. Mr. Lopez thanked everyone participating and that the City has established a vision and goals and have identified specific locations from a qualitative standpoint and that he feels the action areas and strategies align with the needs of the City. Mr. Lopez stated that the City is pleased with the progress and look forward to seeing the resulting plan and project recommendations.
- 2016 Crossing Guard Workshop Planning Meeting: Sarath Joshua stated the tentative dates for this year's workshops are July 28th in Phoenix, August 2nd in Mesa, and August 4th in Peoria. Mr. Joshua requested that Margaret Boone report on new membership to the group. Ms. Boone noted a new member to the planning group from the Town of Gilbert recruited by Brandon Forrey from Peoria and invited anyone interested in participating in the group consisting in representation from Gilbert, Glendale, Peoria, Phoenix, Mesa, Scottsdale and Tempe, to contact her by e-mail. Mr. Joshua added that this is a remarkable group that has helped not only with organizing and facilitating the workshops but also helping develop the training video used at the workshops.
- MAG ITS & Safety On-Call RFQ: Sarath Joshua stated that the RFQ is due to be

- advertised on January 28th ahead of the proposal submittal deadline of March 1st. The new contracts will be developed with the consultants qualified through this process, in anticipation of the new contracts being in place by September 2016. A lot of work that is done at MAG, RSAs and even the Avondale STSP, is done by on-call consultants. The current contract contains ten qualified consultants to do this work. Mr. Joshua finished by thanking those who have volunteered to help review and evaluation of the Statements of Qualifications to be submitted in March.
- Transportation Review Board Annual Meeting: Sarath Joshua requested that Margaret Boone provide a brief report on her experience attending the TRB annual meeting. Ms. Boone reported that there is so much scheduled within the week of the annual meeting but that she was able to attend the Transportation Safety Planning Committee meetings as well as several presentation sessions of interest to the Committee. One meeting agenda included discussion on identifying safety elements in all improvement projects. MAG was recognized at the meeting as one of the only organizations in the nation with a formal Transportation Safety Committee and the Committee's recent work to include safety evaluation criteria in all projects programmed in the TIP. Ms. Boone also reported on research efforts for developing crash modification factors, the use of safety research in national standards and guidelines, and development of safety performance factors.

5. Programming HSIP Funds

Chair Dana Alvidrez invited Sarath Joshua to report on this agenda item for information and discussion. Mr. Joshua stated that through discussions with ADOT there seems to be a call for projects coming up in February. HSIP projects have been programmed through 2018 for the MAG region, and that through that process, there is still approximately \$508,000 still available to be programmed. The Committee was referred to the list of high crash risk locations provided in the agenda packet. This list was generated using only fatal and serious injury crashes, based on the new ADOT guidance, for possible use of identifying locations for future HSIP projects. Mr. Joshua asked Margaret Boone to provide more detail on the materials provided for committee discussion. Ms. Boone suggested that ADOT provide any new information on the upcoming call for projects before review of the information by the committee. Mona Aglan from the ADOT Traffic Safety Section stated that ADOT will be issuing a call for projects on February 1st and that ADOT has identified due dates for receiving the applications of May 1st. Ms. Aglan noted that eligibility of projects will remain the same for the use of K and A crashes only in demonstrating a b/c ratio of 1.5 or greater and that Larry Tally could provide more detail on changes to the guidance document and the application. Kiran Guntupalli asked if the call is for FY 2017. Ms. Aglan stated that it would be for the suballocation for FY 2017. Mr. Joshua asked if an agency could submit an application for FY 2019. Ms. Aglan stated that an agency could submit for projects for 2017, 2018 and 2019 since it would be tied to work being done in 2017, but it would be too early to review applications for work beginning in 2019. It was clarified by Larry Tally that submissions for 2018 would be for state funds, but as Ms. Aglan stated if there is work to be done with MAG HSIP in FY 2017 the application would still be reviewed. Mr. Guntupalli asked how much is available in each 2017 and 2018. Ms. Boone stated that the strategy is to complete programming of the MAG HSIP suballocation and that the way it is stated as \$508,000 total for FY 2017 and 2018 is so that agencies are not pigeon-holed into submitting a project for only one year. Mr. Joshua highlighted that for guidance for programming of FY2019 would be

provided by ADOT in the future. In addition, with the FAST Act the HSIP amount has been increased and asked for a clarification from Ms. Aglan regarding this. Ms. Aglan stated that they have not been given a concrete amount but the \$42 million previously estimated by the state could be assumed as an approximate amount. Ms. Boone then reviewed the Top 100 list of high crash risk locations generated using fatal and serious crashes only for discussion by the Committee. Mr. Joshua noted that the listing looks at only intersections and only fatal and serious injury crashes in order to highlight those candidate locations that could have a good chance of competing for HSIP funding for safety improvements. Ms. Boone noted that in her review of the analysis that every intersection reviewed in the Corridor Safety Plan Pilot project is in the Top 50 on the list and that some of the recommendations from that project could be considered by the City of Phoenix, as an example. Julian Dresang stated that the city of Tempe ran into an issue regarding using local monies for design and inputting the \$30,000 ADOT review fee in the application making the design portion a federalized project and that is something other agencies may want to consider when developing projects and applications for the upcoming call for projects. Ms. Aglan noted that even if local funds are used for design, the construction is using federal dollars. Mr. Dresang noted that the design would still go through all the clearances but be able to use their on-call consultant list for the design. Kelly LaRosa noted that the key is that for a CA agency, they can use their own procurement process approved by ADOT, but still need meet all federal requirements for clearances, etc. Mr. Dresang clarified that the issue that he ran into was that the only federal funds identified for the design was the ADOT review fee. Ms. Aglan stated that she would have to get clarification on this issue and provide that to the committee through MAG. Mr. Tally added that in last year's call for projects, the individual developing the application contacted ADOT to work with them in advance and reiterated the intention to do the same for the upcoming process. Ms. Boone asked if ADOT would be including a pre-review period prior to the application submission date. Mr. Tally stated that this pre-review could be worked into the schedule. Andrew Kwaskiak from Tatum Group requested to address the committee to make suggestions on possible enhancements to identifying locations. Mazen Muradvich asked how a crash was analyzed as intersection related. Ms. Boone clarified that MAG does not analyze the intersection in detail to determine that, but it is simply how it was coded as intersection related by the reporting police officer related to the proximity of the crash to the intersection.

6. RTSIMS Enhancements

Chair Dana Alvidrez requested that Sarath Joshua provide a review of this item for information and discussion. Sarath Joshua referenced the software used to generate the list reviewed by the committee in the previous agenda item. Lee Engineering utilized this software to analyze crashes for the MAG STSP and had identified several issues with the software. Lee Engineering was then selected to develop a User's Manual for RTSIMS based on their knowledge and additional input from MAG staff. The User's Manual is now complete and now some of the application issues are being addressed through a separate on-call task order with Kimley-Horn and Associates which includes providing additional enhancements. This task order is almost finalized and MAG would like to demonstrate the enhancements to RTSIMS to the committee. In addition, once the enhancements are complete, MAG intends to open up an on-line version for local agencies with existing data access agreements in place with ADOT. Ms. Boone reviewed the list of agencies with data access agreements for information purposes and then went through an

on-screen version of the RTSIMS software highlighting the latest enhancements. These included the ability to generate a data export of all the fields available in the crash report, modifications to report outputs, the addition of a “total” column in standard and custom reports, roadway segment queries, and elimination of hang ups and force-outs and improved speed of query execution. Larry Tally asked how a segment would be queried for those that change names in the section, such as Country Club. Ms. Boone stated that the second “onroad” street name would have to be added as a filter. Mazen Muradvich asked if these locations could be plotted on a map using the latitude and longitude information. Mr. Joshua clarified that one could potentially do that using the spreadsheet provided from the data export, but that that ability is not imbedded in the RSTIMS software at this time. Mr. Muradvich asked about the collision manner coding and if it is available. Ms. Boone noted that MAG has created a separate tab within spreadsheets based on what is in the ADOT crash report manual and then created a “lookup” equation to do the decoding for each of those for which codes are available. This is a fairly easy thing to do once the data export has been done. Mr. Joshua noted that there is also the ability to save queries so that you can access a previous report filters at a later date. Mr. Joshua asked if once this goes live queries run by one agency will could be accessed by other agencies. Ms. Boone stated that if Chandler ran a query for Florence that the query will result in null fields. Local agencies will only be able to run queries for their jurisdiction only. Mr. Joshua stated that some agencies may not have access to a crash data base and that this could be a useful tool for them to consider especially with the addition of the User’s Manual.

7. Road Safety Assessment (RSA) and Project Assessment (PA) Program Enhancements

Chair Dana Alvidrez introduced this item for information and discussion on developing enhancements to the MAG road safety assessment program and how we can align more with the new ADOT HSIP guidance. Sarath requested that Margaret Boone present on this item. Ms. Boone stated that similar to other years, MAG has included \$300,000 in the work program to perform RSAs and PAs. Over 40 RSAs have been conducted in the region since the program’s inception at MAG in 2011. As a logical next step the Committee requested that the program be extended to provide 15% design for safety improvements recommended in RSAs as development of Project Assessments. This was added to the RSA program in 2013 based on Committee member requests. As an example, one of the Tempe RSAs had a PA developed and then those improvements were submitted successfully as an HSIP project application in the past cycle. Furthermore, there have been discussions during RSAs with the consultants and the local agencies regarding further highlighting the real safety issues at an intersection or corridor. MAG has compiled a lot of data and recommended safety improvements from the RSA program and suggests looking at the Top 100 list of high crash risk locations in more detail. The goal is to establish a better way to address these issues and at the same time better identify safety improvements that would align with the new ADOT HSIP guidance for project eligibility. MAG has prepared a list similar to the traditional Top 100 list of high crash risk locations, but includes more detail in terms of predominant crash types. For example, at Indian School Road and 59th Avenue the predominant crash type was left-turn crashes with the KABCO scale broken out for that crash type. The secondary predominant crash types were also noted with their frequency of fatal and serious injury crashes. This was done to prompt discussion on how we can possibly use this information to identify locations that would have a better outcome in addressing the safety issues. In addition,

looking at the information in this way could point towards a region-wide systemic safety project. Ms. Boone noted that this effort also addresses several strategies in the STSP to enhance the RSA program. Ms. Boone encouraged local agencies that have had RSAs conducted at locations in their jurisdiction, provide feedback on how the program could better meet their needs in addressing road safety. This discussion and input provided will be incorporated into refinements to the RSA and PA program to be included in the next round of RSAs and PAs. Sarath Joshua mentioned that the next call for project would be sometime in July to conduct RSAs in the fall. This discussion is based on input from RSA teams and local agencies and the handout Margaret has prepared incorporates the MAG Network Screening Methodology for all crash severities. If you consider only K and A, in terms of identifying locations, this may be a narrow approach and this list provides more information to put more focus on locations with a large number of a certain crash type. Kiran Guntupalli noted that the location at Peoria and 51st Avenue is one that the majority of crashes were left turn and the City installed a flashing yellow arrow at the location on their own dime. Sarath noted that there will also be a forum planned that will include consultants and local agencies to refine the process of conducting the RSAs and PAs to the benefit of the program as a whole. Ms. Boone stated that MAG is seeking input on enhancements to put towards the RSA and PA program and that if there were to be a call for projects in the spring of 2016, input would be needed for the next meeting in March. Mona Aglan asked how many locations are typically selected in a year. Mr. Joshua stated that with the budget of \$300,000 we have been able to do about eight RSAs and two PAs.

8. Reports by Committee Members on Transportation Safety Activities

Chair Dana Alvidrez requested reports from committee members on transportation safety related activities at local agencies. Sam Diggins from Valley Metro reported on safety efforts their agency is conducting on the light rail extension recently put into service.

9. Request for Future Agenda Items

Chair Dana Alvidrez requested future agenda items of interest to Committee members. Sarath Joshua mentioned that with the ADOT call for projects coming up, MAG will turn this around in a week and issue the MAG HSIP call for projects with the short submittal timeframe. This may prompt a special meeting once a schedule can be worked out.

10. Next Meeting

Chair Dana Alvidrez stated that the next regular meeting is scheduled for Tuesday, March 22, 2016 at 10:00 a.m. in the Ironwood Room.

11. Adjournment

Chair Dana Alvidrez adjourned the meeting at 11:37 a.m.

FY 2017 & 2018 HSIP Project Application Schedule	
Date	Action
Tuesday February 4, 2016 3:00 p.m.	Applications available for download at http://azmag.gov/safety
Thursday March 24, 2016 Noon	Due Date and Time for complete application package to be submitted to MAG staff at hsip@azmag.gov .
Friday March 25, 2016 3:00 p.m.	MAG to forward applications to ADOT LPA for pre-application deadline review and coordination items with Local Agencies. Applications are sent to the MAG Transportation Safety Committee for review.
Monday April 18, 2016 10:00 a.m.	Due Date and Time for coordination of outstanding items of clarification with ADOT and revised HSIP applications to be submitted to MAG. Revised applications forwarded to the MAG Transportation Safety Committee for final evaluation.
*Wednesday April 27, 2015 9:00 a.m.	Project Presentations to MAG Transportation Safety Committee, MAG *Chaparral Room, 2nd Floor. Possible recommendation of list of projects to TRC. Special Meeting.

*Please note special day, time and conference room for the April Special Meeting of the Transportation Safety Committee

2016 MAG SAFETY ON-CALL SERVICES CONSULTANTS
RANK ORDERED LIST OF RECOMMENDED CONSULTANTS

Transportation Safety Planning (B1)	Transportation Safety Training (B2)	Crash Data Analysis Tools (B3)
1 Kimley-Horn & Associates	1 Kimley-Horn & Associates	1 Jacobs
2 Lee Engineering	2 AMEC	2 Kimley-Horn & Associates
3 Michael Baker International	3 Jacobs	3 AMEC
4 AMEC	4 Tatum Group LLC	4 Tatum Group LLC
5 Jacobs		
6 ASJ		
7 AECOM		

Review Panel

Margaret Boone - MAG

Eric Nava - MAG

Dana Alvidrez - City of Chandler

Kiran Guntupalli - City of Glendale

Kerry Wilcoxon - City of Phoenix

Rank	Agency	Location	Crashes	CF Score	CS Score	CT Score	Final Score	Rank from K and A Only List	Predominant Crash Frequency	Predominant Crash Type Severity					Predominant Crash Type	Pedestrian					Bicyclist					PED/BIKE Crash Frequency	Notes
										Type Severity						Pedestrian					Bicyclist						
										K	A	B	C	O		K	A	B	C	O	K	A	B	C	O		
1	Phoenix	INDIAN SCHOOL RD & 59TH AVE	183	0.69	1.00	0.63	0.86	13	71	2	0	9	18	42	LEFT_TURN	0	2	0	0	0	0	0	0	1	1	4	*42 RE with 1 B, 21 ANGLE with 2 A, 3 OTHER with 1 A
2	Phoenix	THOMAS RD & 43RD AVE	193	0.73	0.55	0.76	0.63	8	68	0	4	12	15	37	LEFT_TURN	1	1	2	1	0	0	0	2	1	0	8	*47 RE with 2 B, 28 ANGLE with 1 A, and 6 OTHER with 1 K and 1 A
3	Surprise	EL MIRAGE RD & BELL RD	88	0.33	0.83	0.29	0.62		25	0	0	0	3	22	REAR_END	0	0	0	1	0	0	0	0	0	0	1	*22 LT with 2 K an 1 A
4	Glendale	PEORIA AVE & 51ST AVE	142	0.53	0.71	0.45	0.62		42	0	4	6	7	25	LEFT_TURN	0	0	0	1	0	0	0	0	1	0	2	*36 RE with 2 B, 29 ANGLE with 2 B
5	Glendale	OLIVE AVE & 59TH AVE	266	1.00	0.36	1.00	0.62	6	80	0	1	4	21	54	REAR_END	0	1	4	2	1	0	0	1	2	0	11	*70 LT with 16 B, SINGLE SSWSD HEAD ON ANGLE each with 1 A
6	Tempe	SOUTHERN AVE & RURAL RD	186	0.70	0.58	0.63	0.61	3	76	0	1	1	15	59	REAR_END	0	2	2	0	1	0	1	4	2	3	15	*32 LT with 4 A, 25 ANGLE with 2 A, 3 SINGLE with 1 A
7	Phoenix	NORTHERN AVE & 7TH ST	121	0.45	0.73	0.38	0.60	15	36	1	4	4	6	21	LEFT_TURN	0	1	0	0	0	0	0	0	0	0	1	*35 RE, 1 ANGLE with 1 K and 1 A, 2 OTHER with 1 A
8	Phoenix	INDIAN SCHOOL RD & 51ST AVE	182	0.68	0.55	0.65	0.60	5	54	0	2	6	14	32	REAR_END	0	1	2	1	0	0	0	1	1	0	6	*51 LT with 1 A, 2 ANGLE with 1 K and 1 A, 2 SINGLE with 1 A, 2 OTHER with 1 A
9	Phoenix	THOMAS RD & 75TH AVE	167	0.63	0.58	0.60	0.59	4	51	1	2	6	18	24	LEFT_TURN	0	2	2	1	0	0	0	0	0	0	5	*51 RE but with 1 K
10	Phoenix	GLENDALE AVE & 43RD AVE	115	0.43	0.68	0.47	0.59	53	46	0	1	4	11	30	REAR_END	1	1	1	1	0	1	0	1	1	0	7	*34 LT with 1 A, 20 ANGLE with 1 A, 4 OTHER with 2 K
11	Phoenix	BELL RD & 43RD AVE	93	0.35	0.72	0.35	0.57	50	32	1	4	2	12	13	LEFT_TURN	1	1	0	1	0	0	0	0	0	0	3	*26 RE, 1 OTHER with 1 K
12	Avondale	MCDOWELL RD & DYSART RD	154	0.58	0.59	0.47	0.56	2	69	0	4	3	8	54	REAR_END	0	1	0	0	0	0	0	3	1	2	7	*38 LT with 1 K and 6 A, 22 ANGLE with 2 A, 3 SINGLE with 1 A
13	Phoenix	INDIAN SCHOOL RD & 67TH AVE	203	0.76	0.43	0.76	0.56	1	61	0	4	7	20	30	LEFT_TURN	0	4	1	0	0	0	1	0	0	0	6	*57 RE with 1 B, 25 ANGLE with 2 A, 4 OTHER with 2 A, 2 SINGLE with 1 A
14	Glendale	NORTHERN AVE & 59TH AVE	183	0.69	0.49	0.61	0.56	56	57	0	1	8	11	37	REAR_END	1	0	2	3	0	0	0	2	0	0	8	*49 LT with 1 A, 23 ANGLE with 1 A, 3 OTHER with 1 K
15	Phoenix	GREENWAY RD & 32ND ST	138	0.52	0.52	0.58	0.53	25	50	0	4	5	18	23	LEFT_TURN	0	1	2	1	2	0	0	2	1	0	9	*33 RE with 1 B, 2 ANGLE with 1 A
16	Phoenix	MCDOWELL RD & 44TH ST	168	0.63	0.44	0.68	0.52	55	62	1	2	6	21	32	LEFT_TURN	0	1	1	3	0	0	0	0	2	0	7	*34 RE, 28 ANGLE with 1 A
17	Tempe	SOUTHERN AVE & 48TH ST	89	0.33	0.67	0.27	0.52		32	0	1	1	6	24	REAR_END	0	2	1	0	0	0	0	0	0	0	3	* 29 LT 1 K and 2 A
18	Phoenix	INDIAN SCHOOL RD & 27TH AVE	144	0.54	0.51	0.55	0.52		52	0	0	4	14	34	REAR_END	0	1	2	2	0	0	0	0	0	1	6	*35 LT with 2 A, 22 ANLGE with 3 A and 1 OTHER with 1 K
19	Phoenix	BELL RD & 19TH AVE	147	0.55	0.49	0.58	0.52		48	0	1	5	14	28	LEFT_TURN	1	2	2	1	0	0	0	0	0	0	6	*45 RE with 1 A, 18 ANGLE with 1 A, 5 OTHER with 1 K
20	Phoenix	CAMELBACK RD & 7TH AVE	108	0.41	0.60	0.39	0.52		108	2	0	6	28	72	REAR_END	1	0	0	1	2	0	0	0	1	2	7	*19 LT with 2 B, 1 OTHER with 1 K
21	Phoenix	BELL RD & 35TH AVE	135	0.51	0.53	0.49	0.52	17	46	1	3	4	13	25	LEFT_TURN	0	2	0	0	0	0	1	0	0	0	3	*32 RE with 4 B, 18 ANGEL with 3 A, 4 OTHER with 1 A
22	Phoenix	BELL RD & 51ST AVE	121	0.45	0.55	0.46	0.51	22	41	1	2	12	13	13	LEFT_TURN	0	0	1	1	0	0	0	0	0	1	3	*34 RE with 2 A, 17 ANGLE with 2 A, SINGLE with 1 A
23	Glendale	BELL RD & 83RD AVE	212	0.80	0.42	0.48	0.51		116	0	0	4	26	86	REAR_END	0	0	1	1	0	0	0	0	2	0	4	*25 ANGLE, 23 LT with 1 K
24	Phoenix	THOMAS RD & 32ND ST	154	0.58	0.46	0.57	0.51		43	0	0	2	10	31	REAR_END	0	2	2	1	0	0	0	1	0	1	7	*39 LT with 3 A, 20 ANGLE with 1 K and 1 A
25	Mesa	ELLSWORTH RD & BASELINE RD	77	0.29	0.64	0.31	0.50		24	1	1	6	5	11	LEFT_TURN	0	0	0	2	0	0	0	1	2	0	5	*17 ANGLE with 1 K and 2 A
26	Phoenix	HAPPY VALLEY RD & 67TH AVE	80	0.30	0.64	0.30	0.50		37	0	2	5	8	22	LEFT_TURN	0	0	0	0	0	0	1	0	0	1	2	*10 ANGLE with 1 K and 1 A, 2 OTHER with 1 K
27	Phoenix	UNION HILLS DR & CAVE CREEK RD	110	0.41	0.57	0.39	0.50	10	42	1	3	15	12	11	LEFT_TURN	0	1	0	0	0	0	0	0	1	0	2	*31 RE with 1 A, 12 ANGLE with 2 A, 2 OTHER with 1 A
28	Phoenix	HIGHLAND AVE & 16TH ST	79	0.30	0.62	0.36	0.50		18	1	0	2	6	9	ANGLE	0	0	2	1	0	1	0	2	2	0	8	*17 RE with 1 A, 10 LT with 1 A, 3 OTHER with 1 K
29	Phoenix	INDIAN SCHOOL RD & 19TH AVE	133	0.50	0.49	0.52	0.50	30	46	0	2	5	16	23	LEFT_TURN	0	1	0	2	0	0	0	2	0	0	5	*28 RE with 1 A, 2 ANGLE with 1 K and 2 A, 4 OTHER with 1 A
30	Phoenix	GREENWAY RD & 40TH ST	72	0.27	0.63	0.32	0.50		22	1	1	4	4	12	LEFT_TURN	1	0	0	2	0	0	0	2	2	0	7	*20 RE, 6 ANGLE, 3 OTHER with 1 K
31	Chandler	WARNER RD & ARIZONA AVE	146	0.55	0.48	0.47	0.49	29	50	0	0	1	11	38	REAR_END	0	0	1	0	0	0	1	0	0	1	3	*34 LT with 2 A, 4 UNK with 2 A
32	Phoenix	MCDOWELL RD & 43RD AVE	157	0.59	0.41	0.65	0.49		59	0	1	5	11	42	LEFT_TURN	0	0	2	3	0	0	1	2	0	0	8	*41 RE with NO K or A
33	Phoenix	NORTHERN AVE & 43RD AVE	116	0.44	0.51	0.47	0.49	37	43	0	4	8	12	19	LEFT_TURN	0	1	2	1	1	0	0	1	1	1	8	*22 Angle with 1 K
34	Phoenix	GREENWAY RD & 43RD AVE	58	0.22	0.66	0.23	0.49		21	1	2	4	9	5	ANGLE	0	0	1	0	0	0	0	0	0	0	1	*6 LT with 1 A, 4 SINGLE with 1 A
35	Chandler	RAY RD & ALMA SCHOOL RD	97	0.36	0.61	0.22	0.48		40	0	1	0	6	33	REAR_END	0	0	0	0	0	0	0	0	0	0	0	*13 LT no K or A
36	Tempe	RURAL RD & BROADWAY RD	160	0.60	0.44	0.47	0.48	86	69	0	0	4	12	53	REAR_END	0	1	0	3	1	0	0	0	2	0	7	*25 LT with 1 K and 1 A
37	Phoenix	BASELINE RD & 24TH ST	138	0.52	0.46	0.50	0.48	65	52	0	1	4	17	30	REAR_END	0	0	2	0	0	0	0	2	2	3	9	*47 LT with 2 A
38	Phoenix	CACTUS RD & 43RD AVE	129	0.48	0.48	0.42	0.47	49	40	0	3	6	7	24	LEFT_TURN	0	0	1	1	0	0	0	0	0	0	2	*34 RE, 14 ANGLE with 1 K
39	Phoenix	INDIAN SCHOOL RD & 16TH ST	134	0.50	0.42	0.55	0.47	88	38	0	0	1	7	30	REAR_END	0	1	2	0	1	0	0	3	0	1	8	*36 LT with 1 A, 19 ANGLE with 1 K and 1 A
40	Phoenix	BUCKEYE RD & 35TH AVE	103	0.39	0.51	0.40	0.46	11	48	1	1	4	15	27	REAR_END	0	0	1	0	0	0	1	0	1	1	4	*34 ANGLE with 9 A
41	Phoenix	CAMELBACK RD & 16TH ST	141	0.53	0.41	0.57	0.46		39	0	0	4	9	26	LEFT_TURN	0	0	2	4	0	0	1	0	1	0	8	*1 SINGLE with 1 K hitting a sign support
42	Mesa	SOUTHERN AVE & DOBSON RD	201	0.76	0.30	0.65	0.46	18	83	0	1	9	21	52	REAR_END	0	0	3	1	1	0	1	4	1	0	11	*41 ANGLE with 3 A
43	Phoenix	UNION HILLS DR & 19TH AVE	122	0.46	0.46	0.46	0.46	47	39	1	2	7	7	22	LEFT_TURN	0	1	2	0	0	0	0	1	0	0	4	*31 RE with 1 A
44	Glendale	THUNDERBIRD RD & 59TH AVE	206	0.77	0.29	0.62	0.45	43	63	0	0	2	13	48	REAR_END	0	0	0	0	1	0	1	4	2	2	10	*43 LT with 1 A, 39 ANGLE with 2 A
45	Phoenix	PARADISE VILLAGE PKWY &																									

46 highlighted locations are those NOT included in Top 100 list based on K & A Only